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ABSTRACT

A study was conducted to examine the economic impact of Gainesville Junior College (GJC) on its 12-county service area. The study involved the collection of data on the county of residence of students, faculty, staff, and administrators; the gathering of information on college gross payroll and local college expenditures; and surveys and estimates of spending by students, faculty, staff, and administrators. Following the compilation of these data, it was possible to compute the local expenditure multiplier of the college, GJC's spending impact on the area, and the employee equivalent resulting from student, faculty, staff, administration, and college spending. Study highlights included the following: (1) students annually spent an average of $7,250 in the local economy; (2) faculty/staff/administrators spent an average of $16,807 annually in the local economy; (3) the college made local purchases of $668,621 in fiscal 1984; (4) total initial spending by the college amounted to $12,868,776, generating an additional spending amount of $8,390,442, for a total expenditure impact of $21,259,218; and (5) the college provided 135 full-time positions on campus and generated an additional 359 full-time jobs in its service area due to college-related spending. Questionnaires and calculations are included in the study report. (LAL)

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ECONOMIC IMPACT

1984 - 1985 ACADEMIC YEAR

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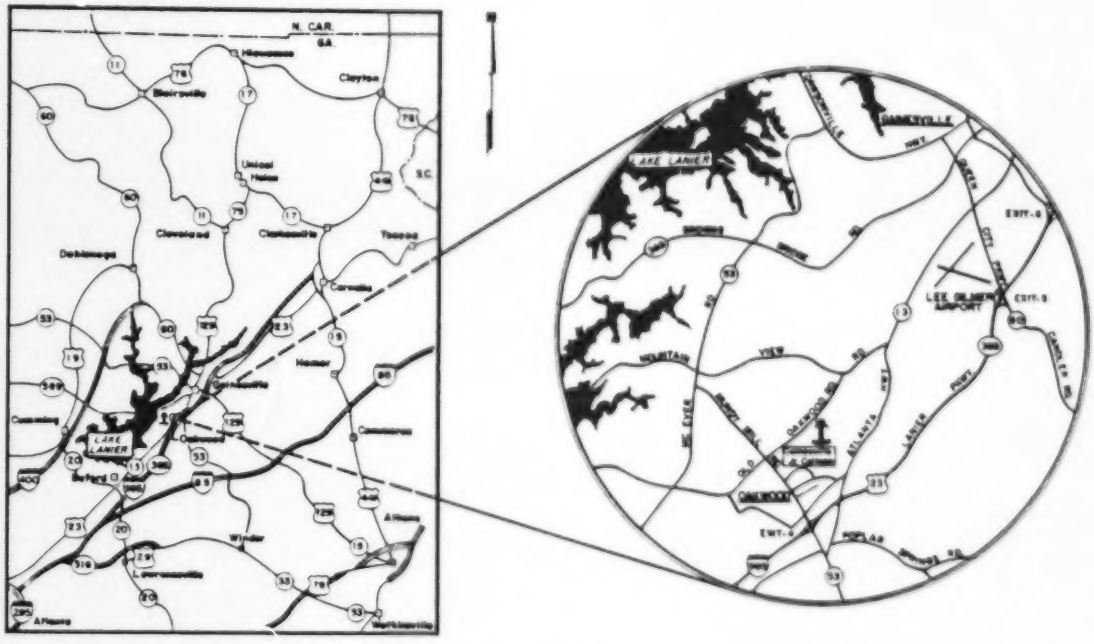

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GAINESVILLE JUNIOR COLLEGE

ECONOMIC IMPACT STUDY

CONDUCTED BY

PHIL SMITH
DEPARTMENT OF ECONOMICS
DIVISION OF BUSINESS

1985

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THE ECONOMIC IMPACT OF GAINESVILLE JUNIOR COLLEGE

1984-1985 Academic Year

Introduction

Gainesville Junior College is located six miles southwest of Gainesville, Georgia. The college was established in 1966, and is operated by the Board of Regents of the University System of Georgia. The college is the only state supported two year institution located in Northeast Georgia, and has a twenty-three county service area designated by the Board of Regents.

The primary purpose of Gainesville Junior College "is to provide a broad range of educational experiences and cultural activities to the community which we serve." Quantifying the benefits of the expansion of human knowledge and capital which the college provides would be difficult, if not impossible. However, we are able to estimate the benefits which the college provides in terms of spending and employment.

This paper will examine the economic impact of Gainesville Junior College upon a selected area. The study will employ a plan developed by Georgia State University in 1976 and refined in 1983. Its implementation was suggested and explained through a conference sponsored by the "Administrative Committee on Institutional Research and Planning," a committee created in 1979 by the University System of Georgia.

In determining the economic impact of the college, three primary injection sources were studied. These sources are: the college payroll and spending patterns by the faculty, staff and administrators; spending by the student body; and direct college purchases. These initial injections; however, activate additional rounds of spending which further enhance the college in some multiple of the three primary injection sources. This paper will derive the value of the local expenditure multiplier, the total dollar spending impact by the college, and the employment generating capacity by the college and its body.

Plan of the Study

Before examining the various categories and methods of obtaining the necessary data for this study, it is essential that we define the affected impact area. As noted earlier, the Board of Regents has designated a twenty-three county area as the service area for the college. Although such a designation could justify including the entire service area, the author has decided that a more precise area would better reflect the actual impact. The area for study will include twelve counties, one being Hall County, the county in which the college is located. Also, the nine contiguous counties to Hall: Banks, Barrow, Dawson, Forsyth, Gwinnett, Habersham, Jackson, Lumpkin and White. The counties of Clarke and Stephens were also included in the study area because of the significant representation of faculty and students from these counties. Faculty and students not living in these counties were not included in the study.

To estimate the figures for the three primary injection sources, the following methods were employed:

(1) Collection of student enrollment by county of residence.

(2) Collection of faculty/staff/administrators by county of residence.

(3) Collection of college gross payroll and local college expenditures.

(4) Survey and weighted estimate of student spending.

(5) Survey and weighted estimate of faculty/staff/administration spending.

Following the compilation of this data, it was possible to compute:

(1) The local expenditure multiplier of the college.

(2) The college's total spending impact on the area.

(3) The employee equivalent resulting from student, faculty, staff, administration, and college spending.

The Registrar's Office provided the necessary data on student enrollment by county. (See Appendix C). Residency data on faculty, staff and administrators was provided by the Office of the Dean of the College and the Office of the Comptroller. The Office of the Comptroller also provided payroll and college expenditure information. A random sample of the student body provided 523 responses and a 100 percent faculty/staff/administration survey provided 89 responses. Weighted spending estimates were then derived from the responses based on population estimates.

The Study

The student survey was conducted in the spring quarter of 1985. As noted earlier, 1351 students resided in counties of the impact area. (796 Freshmen and 555 Sophomores). The student survey provided 282 Freshmen and

241 Sophomore responses. Weighted spending estimates for each class were figured and then summed to calculate the total weighted annual average. (See Appendices F and G).

For example, consider the spending category, "Entertainment." (See Appendix F). The responses of the Freshmen living in impact counties indicated a total spending of $ 11,062, while the Sophomore total was $ 9,805. To figure the freshman weighted annual average, the total expenditures of $ 11,062 was first divided by the number of freshman responses of 282; this answer was then multiplied by the freshman population percentage of 58.9. Finally, this figure was multiplied by twelve to give the annual expenditure. Thus, the freshman weighted annual average equals:

$ 11,062/282 X .589 X 12 = $ 277.32

The Sophomore weighted annual average equals:

$ 9,805/241 X .411 X 12 = $ 200.64

The total weighted annual average by students for entertainment was then:

$ 277.32 + $ 200.64 = $ 477.96

After calculating weighted annual averages for the other categories, the figures were summed to derive a total weighted annual average of student expenditures which was $ 7,250. To calculate the total annual student spending, simply multiply the total weighted annual average by the number of students in the impact area. Total annual student spending was found to be $ 9,794,750. (See Appendix G).

Similar methods were used to derive the estimation of faculty, staff and administration spending. Weighted annual averages were derived for each group and then summed to reflect the total weighted annual average in each

account. (See Appendix I). These figures were then summed to derive the total weighted annual average of employee spending, which was $ 16,807.

Calculating total annual employee spending requires the separation of full and part-time employees. First, to derive full-time employee spending, the number of full-time employees was multiplied by the total weighted average. (See Appendix J). Second, a measurement called the local average propensity to consume was derived. This figure was then multiplied by the part-time payroll figure (See Appendix J) to estimate the amount of local expenditure by part-time employees. Finally, total employee spending was calculated by adding full-time employee spending and part-time employee spending, giving a figure of $ 2,405,405.

The third source of initial injections is local college expenditures. Expenditures by the college were first reviewed to determine which purchases were made within the impact area. Each vendor was then categorized into an item account, which best reflected the type of purchase made by the college. (See Appendix L). Those purchases which did not or could not be placed into an established item account were categorized as other purchases. Summing the item accounts shows the college made $ 668,621 in local purchases. This figure represents a small percentage of total expenditures, since many purchases are made outside the impact area.

Direct college purchases represent only part of the initial impact since such purchases generate additional spending. To derive the value added by college purchases, it was necessary to calculate value added ratios. (See Appendix K). These ratios reflect a relationship between each payroll dollar and each dollar of sales. This ratio was then multiplied by the amount of local college purchases. (See Appendix L). For example, consider the item

"Retail Trade Purchases." The college made initial purchases in the impacted area totaling $ 230,565. The value added ratio was calculated to be .115, which says for each dollar of sales eleven and one-half cents were paid out for payroll expenses. This resulted in additional gross income which is reflected as value added of $ 26,515.

The total value added of all college purchases in the impacted area was found to be $ 181,152. Since all income received is not necessarily spent in the local area, it is necessary to multiply the local average propensity to consume by the total value added to derive the initial local income generated by college purchases. This amounted to $ 123,183. (See Appendix M, Item A.5).

Appendix M shows the process of deriving the local expenditure multiplier. The multiplier is found by computing two initial ratios -- the ratio of initial local spending to total college spending, and the ratio of induced local spending to initial local spendings. (Items A.8 and 13.11).

To derive the figures for initial local spending, it was necessary to combine the spending by the college employees with the local income spent due to generated purchases. This figure was $ 2,528,588. (Item A.6). Determining total spending by the college was then found by summing the total of college purchases and the college payroll. This total was $ 4,206,335. (Item A.7). Using these figures, the initial ratio of local spending to total spending was found to be .601.

In order to calculate the second ratio, we must first estimate the induced local spending, which is done in two steps. (Items B.9 and B.10). We begin by estimating the value added by total initial local spending.

This figure is found to be $ 290,788. Note that the value added ratio used was the ratio reflective of trade purchases value added only. This was done for simplicity and also because it most accurately reflects the item expenditures by households. The local value added was then multiplied by the local average propensity to consume, which resulted in induced local spending of $ 197,736. (Item B.10). The ratio of induced local spending to initial local spending was then found to be .078. (Item B.11).

The computation of the multiplier is then completed in Section "C" and is found to be 1.652. This says for each dollar that is spent by the college or the indivudals associated with the college, it generates an additional 65.2 cents in expenditures throughout the impacted area. Appendix N then computes the total economic impact by multiplying the local expenditure multiplier by the summation of the three primary injection sources of the college. It is shown that Gainesville Junior College provides total local expenditures of $ 21,259,218. (Initial local expenditures account for $ 12,868,776 and $ 8,390,442 is generated).

Finally, in Appendix Q the total employee impact of Gainesville Junior College is derived by multiplying the total initial employment by the local multiplier. College related spending generated an additional 195 full-time jobs; thus, a total of 494 full-time positions are attributable to Gainesville Junior College. This employee impact is conservative since it omits all part-time positions of faculty, professional staff and students.

SUMMARY HIGHLIGHTS OF STUDY

-- Students annually spend an average of $ 7,250 in the local economy.

-- Faculty/staff/administrators spend an average of $ 16,807 annually in the local economy.

-- The college made local purchases of $ 668,621 in Fiscal 1984.

-- Total initial spending by the college amounted to $ 12,868,776. This generated an additional spending amount of $ 8,390,442. Thus, the total expenditure impact of Gainesville Junior College was found to be $ 21,259,218.

-- The college provides 135 full-time positions on campus, and generated an additional 359 full-time jobs in the impact area due to college-related spending.

APPENDIX A

STUDENT QUESTIONNAIRE

9/10

1. In which county do you currently reside? _____
2. If you were not enrolled at Gainesville Junior College, would you currently be living at your present residence? Yes _____ No _____
3. If you had not selected Gainesville Junior College, would you have attended college elsewhere? Yes _____ No _____
4. Female _____ Male _____ Age _____
5. Class: Freshman _____ Sophomore _____ Other _____
6. Married _____ Single, Divorced, Widowed _____
7. Full-time student _____ Part-time student _____
8. What do you spend each quarter for tuition and fees? _____
   Books and supplies? _____
   Do you receive financial assistance, (i.e., Pell Grant, scholarship)?
   Yes _____ No _____
9. Did you buy a car primarily for transportation to and from Gainesville Junior College? Yes _____ No _____
   A) If yes, what is your average total monthly expenditure for your automobile (payment, repairs and maintenance, insurance, gas, license, etc)? _____
   B) If no, what is your average monthly automobile expenditure due to commuting to Gainesville Junior College (gas only)?
   _____
10. Please estimate your average monthly expenditures. Fill in totals only where applicable and include only those payments made by yourself. For example, if two students share a $200 a month apartment, each student reports only $100 for rent payments.

Rent or house payment	_____
Food consumed at home and other household items	_____
Eating out	_____
Entertainment (movies, concerts, sports, etc.)	_____
Clothing	_____
Personal Services (hair, laundry, repairs other than automobile, etc.)	_____
Health Services (including insurance)	_____
Utilities (electric, gas, water, telephone)	_____
Furniture and appliances	_____
Other expenses not listed above	_____

APPENDIX B

FACULTY/STAFF QUESTIONNAIRE

The following items are intended to help estimate the economic impact of Gainesville Junior College on the Hall and surrounding county area.

A. What is your primary employment status at Gainesville Junior College? ___

_____ Full-time faculty
_____ Part-time faculty
_____ Full-time administration
_____ Part-time administration
_____ Full-time staff
_____ Part-time staff

B. In what type of housing do you reside? ___

_____ Rent
_____ Own home

C. In which county do you currently reside? _____ ___ ___ ___

Please estimate your average monthly expenditures:

D.	Rent or house payment (include condo. maintenance fee) _____	___ ___ ___
E.	Utilities (water, gas, lights, telephone) _____	___ ___ ___
F.	Food consumed at home & household items _____	___ ___ ___
G.	Eating out (restaurants & fast food establishments) _____	___ ___ ___
H.	Entertainment (theatre, sports, concerts, etc.) _____	___ ___ ___
I.	Automobile (payments, repairs, gas, insurance) _____	___ ___ ___
J.	Other transportation (bus, carpooling, etc.) _____	___ ___ ___
K.	Clothing _____	___ ___ ___
L.	Personal services (laundry, hair, repairs) _____	___ ___ ___
M.	Health services (including insurance) _____	___ ___ ___
N.	Furniture and appliances _____	___ ___ ___
O.	Other _____	___ ___ ___

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APPENDIX C

STUDENT ENROLLMENT BY COUNTY (SPRING 85)

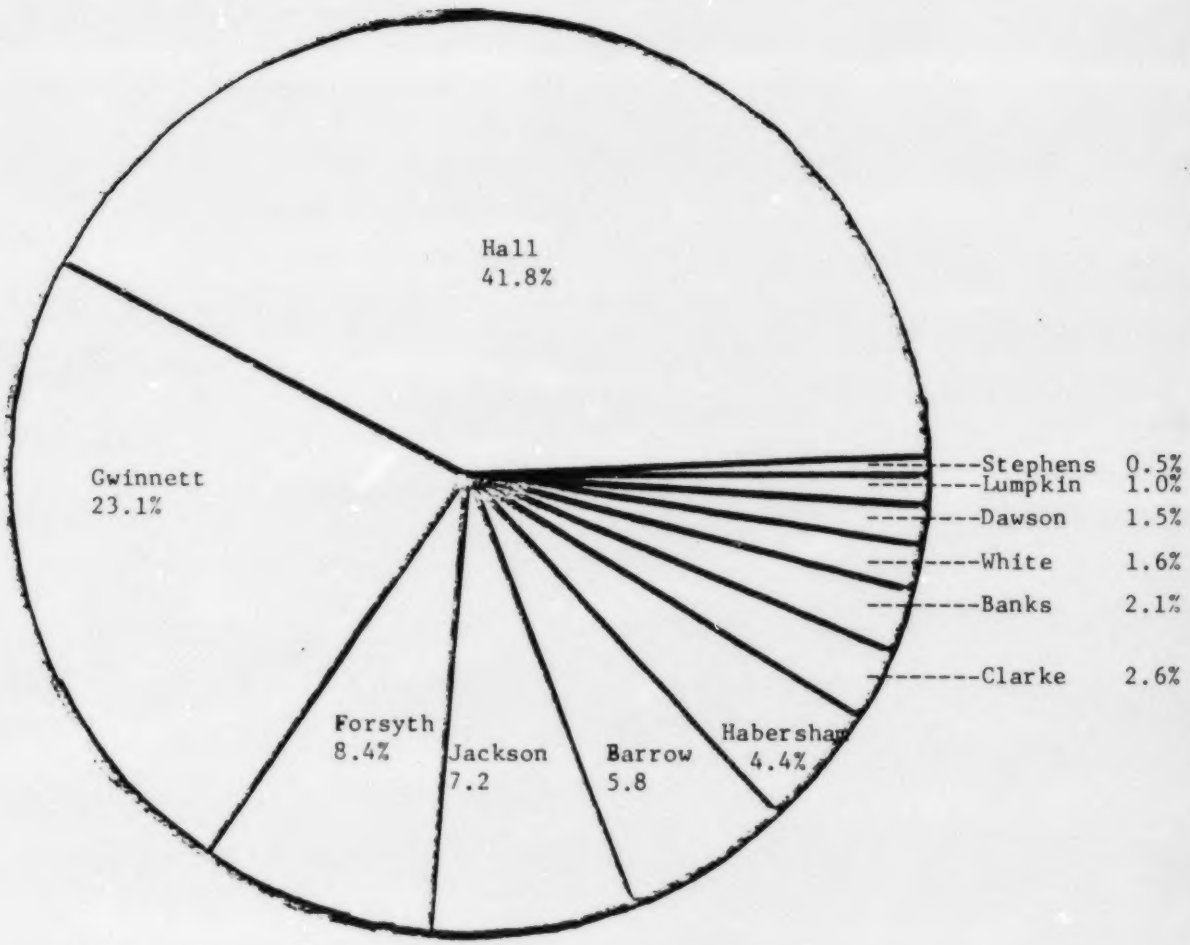
County	Freshman	Sophomore	Total
Banks	15	13	28
Barrow	41	37	78
Clarke	19	16	35
Dawson	16	4	20
Forsyth	70	44	114
Gwinnett	195	117	312
Habersham	39	20	59
Hall	329	236	565
Jackson	42	55	97
Lumpkin	8	6	14
Stephens	6	1	7
White	16	6	22
Total	796	555	1,351

	N	FR	SO
Student Population	1,351	58.9%	41.1%
Student Survey	523	53.9%	46.1%

APPENDIX D

STUDENT ENROLLMENT BY COUNTY

(Impact area counties only)



APPENDIX E

MISCELLANEOUS STUDENT SURVEY DATA

FRESHMAN RESPONSES: 282

Male	112	Married	39
Female	170	Non-Married	243

Do you receive financial assistance?

Yes	68
No	214

*Age Categories:

17 - 19	191
20 - 21	22
22 - 29	30
30 +	18

SOPHOMORE RESPONSES: 242

*Male	105	*Married	45
Female	136	Non-Married	195

*Do you receive financial assistance?

Yes	56
No	184

*Age Categories:

18 - 19	69
20 - 21	98
22 - 29	24
30 +	14

*Item totals do not add up to total responses in some cases due to incomplete information provided by the student.

APPENDIX F

STUDENT SPENDING ESTIMATES BY CLASS

Category	Freshman Total Expenditures	Sophomore Total Expenditures	Freshman Weighted Annual Average	Sophomore Weighted Annual Average
Books*	$ 20,118.10	$ 18,914.50	$ $ 126.06	$ 96.78
Housing	15,660.50	21,806.10	392.52	446.28
Auto*	9,936.00	8,482.00	1,560.60	996.00
Food & Household	16,085.00	16,149.50	403.20	330.48
Eating Out	14,028.50	12,226.00	351.60	250.20
Entertainment	11,062.00	9,805.00	277.64	200.64
Clothing	12,415.00	11,075.00	310.80	226.68
Personal Services	6,141.00	5,230.50	153.96	107.04
Health Services	6,224.11	5,235.00	156.00	107.16
Furniture & Appliances	1,199.00	1,139.00	30.00	23.38
Utilities	8,987.00	7,403.00	225.24	151.56
Other	7,323.00	6,895.00	183.60	141.12

The formula used to derive the weighted annual average is:

Total Expenditures/Survey response of class X Class Population Percentage X 12

*The responses for the categories "Books" and "Auto" were derived in a slightly different manner. The student response on book expenditures was based on a per quarter basis instead of a monthly basis and was treated accordingly. The student response on automobile expenses attempted to better extract the significance of Gainesville Junior College being a commuter college. Responses were significant if the student purchased an automobile primarily for transportation to and from the college. The survey body was, therefore, smaller than for the other responses.

APPENDIX G

ESTIMATION OF STUDENT SPENDING

	Total Expenditures	Sample Annual Average	Weighted Annual Average
Books	$ 39,033	$ 224	$ 223
Housing	37,467	860	839
Auto	18,418	2,540	2,557
Food & Household	32,235	740	734
Eating Out	26,255	602	602
Entertainment	20,867	479	478
Clothing	23,490	539	538
Personal Services	11,372	261	261
Health Services	11,459	263	263
Furniture & Appliances	2,338	54	53
Utilities	16,390	376	377
Other	14,218	326	325
TOTAL	$253,542	$7,264	$7,250

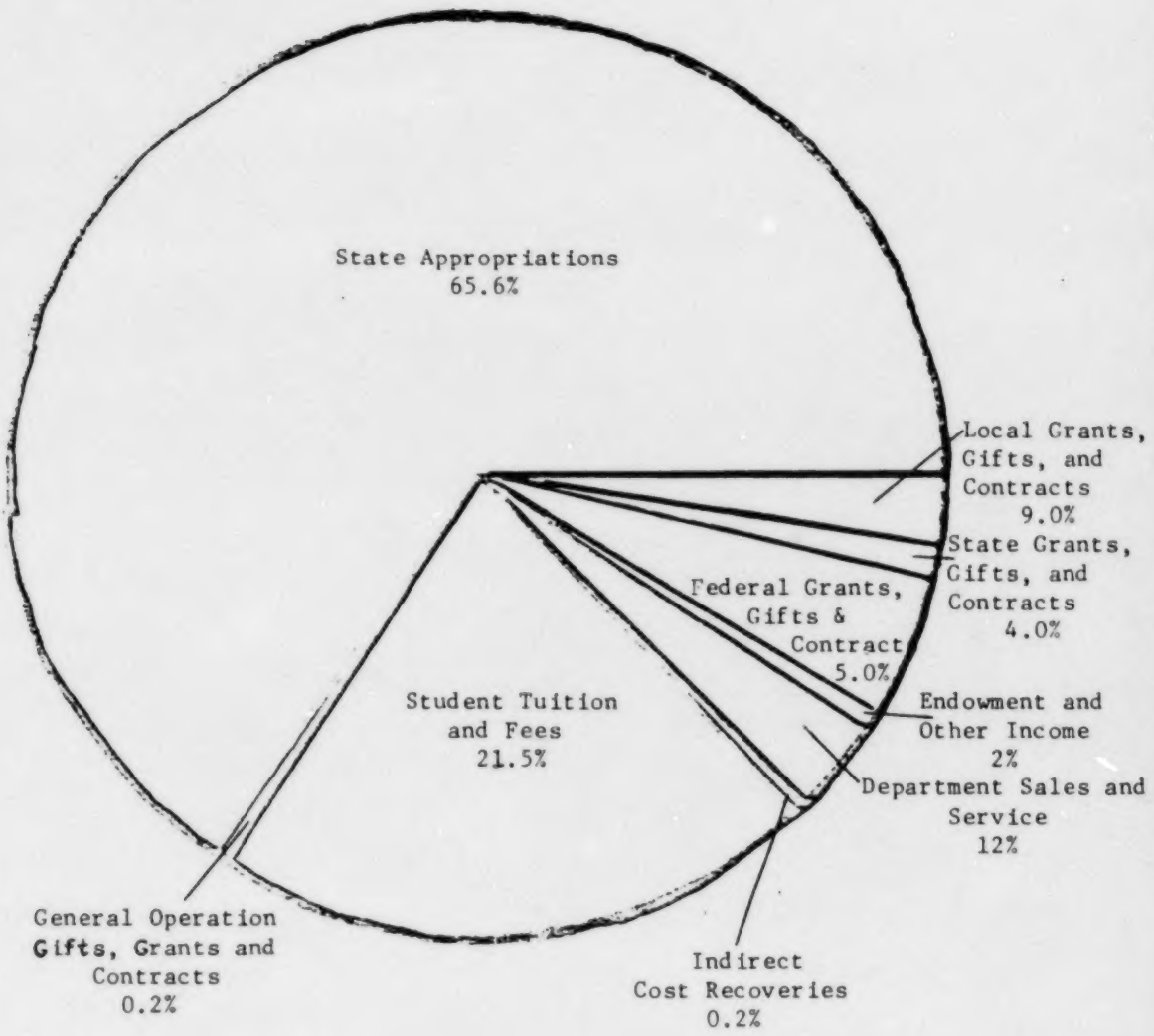
Total student spending = N of total student population in impact area X total weighted annual average =

$7,250 X 1,351 = $9,794,750

APPENDIX H

STATEMENT OF EDUCATIONAL AND GENERAL

REVENUE -- 1984-1985 Fiscal Year



APPENDIX I

ESTIMATION OF FACULTY/STAFF/ADMINISTRATION SPENDING

	N	Faculty Full-Time	Faculty Part-Time	Staff/ Administration Full-Time	Staff/ Administration Part-Time
Population	(171)	27%	16%	52%	5%
Sample	(89)	39%	7%	47%	7%

Account	Sample Annual Average	Weighted Annual Average
Housing	$ 4,032	$ 3,976
Utilities	1,740	1,776
Food & Household	3,168	3,112
Eating Out	1,008	1,089
Entertainment	420	467
Automobile	3,036	2,972
Clothing	792	733
Personal Services	468	464
Health Services	948	914
Furniture & Appliances	360	317
Other	1,009	987
	$16,981	$16,807

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Full-Time	$3,337,037
Part-Time	200,677
Total	$3,537,714

APPENDIX J

TOTAL EMPLOYEE SPENDING WORKSHEET

Full-Time Employee Spending =

N of full-time employees X Employee weighted average expenditure (Appendix I) =

135	X	$ 16,807	=	$ 2,268,945

Portion of Full-Time Payroll Spent Locally =

Full-time spending (above) / full-time payroll (Appendix I) =

$ 2,268,945	/	$ 3,337,037	=	.680

Part-Time Spending =

Part-time payroll (Appendix I) X portion of full-time payroll spent locally (above) =

$ 200,677	X	.680	=	$ 136,460

TOTAL EMPLOYEE SPENDING =

Full-time employee spending + part-time employee spending =

$ 2,268,945	+	$ 136,460	=	$ 2,405,405

APPENDIX K

CALCULATION OF VALUE ADDED RATIOS

Item	SIC Code	Sales	Payroll	Value Added Ratio
Employee Travel & Benefits	7011	$ 755,382	$ 211,837	.280
Taxes & Utilities				.397*
Retail Trade Purchases	5000	$23,755,897	$2,741,897	.115
Finance & Insurance	7300	$ 2,331,640	$ 880,807	.378
Rental				.219*
Repair Services	7600	$ 305,942	$ 103,563	.339
Business Services	(use value added ratios of finance)			.378
Vehicle Repair & Service	7500	$ 766,191	$ 163,199	.213
Other	(use value added ratios of retail trade)			.115

Value added ratio = payroll/sales

*J. Wilson, "Economic Impact of a University on the Local Economy," unpublished dissertation, Kent State University, pp. 148 and 153.

Value added ratios are calculated from information in: Census of Retail Trade: Geographic Area Series, U.S. Department of Commerce, 1982.

Census of Service Industries: Geographic Area Series, U.S. Department of Commerce, 1982.

APPENDIX L

CALCULATION OF INITIAL IMPACT OF COLLEGE PURCHASES USING VALUE-ADDED RATIO*

(1) Item	(2) Amount of Local Purchase	(3) Value Added Ratio	(4) Value Added (2) X (3)
Employee Travel & Benefits	$ 29,045	.280	$ 8,133
Utilities	225,922	.397	89,691
Retail Trade Purchases	230,565	.115	26,515
Finance & Insurance	9,323	.378	3,524
Rental	9,976	.219	2,185
Repair Services	85,781	.339	29,080
Business Services	45,005	.378	17,012
Vehicle Repair & Service	12,418	.213	2,645
Other	20,586	.115	2,367
TOTAL	$ 668,621		$ 181,152

Adapted from S. R. Bresler, "Multiplier for a Public Program," unpublished dissertation, Georgia State University, 1974, pp. 35-37.

APPENDIX M

COMPUTATION OF A DIFFERENTIAL EXPENDITURE MULTIPLIER* USING LOCAL VALUE ADDED

Figures Needed for the Computation of Multiplier:

Spending by College employees	= $ 2,405,405
College Payroll	= $ 3,537,714
Value added by College local purchases	= $ 181,152
College Purchases	= $ 668,621

$$m = 1 + \frac{r}{1-s}$$ where r = initial spending, s = re-spending ratio

A. Computation of r, the proportion of total College spending that is spent locally.

1. Spending by College employees = $ 2,405,405
2. College payroll = $ 3,537,714
3. Portion of payroll spent locally (1) / (2) = .680
4. Value added by College local purchases = $ 181,152
5. Initial local income generated by purchases (3) X (4) = $ 123,183
6. Total initial local spending (1) + (5) = $ 2,528,588
7. Total College spending (College purchases) + (2) = $ 4,206,335
8. Ratio of initial local spending to total spending (6) / (7) = .601

B. Computation of s, secondary local spending induced by initial local spending.

9. Local value added by total local spending (6) X (.115**) = $ 290,788
10. Induced local spending (9) X (3) = $ 197,736
11. Ratio of induced local spending to initial local spending (10) / (6) = .078

C. Computation of multiplier.

12. 1.000 - (11) = .922
13. (8) / (12) = .652
14. 1.00 + (13) = 1.652

*Adapted from S. R. Bresler, "Multiplier for a Public Program," unpublished dissertation, Georgia State University, 1974, pp. 34-46.

**Trade purchases value added.

APPENDIX N

COMPUTATION OF ECONOMIC IMPACT
BY GAINESVILLE JUNIOR COLLEGE

ECONOMIC IMPACT =

College purchases	+
Total Employee Spending	+
Total Student Spending	X
Multiplier	=

[$ 668,621 + $ 2,405,405 + $ 9,794,750] X 1.652 =

$ 21,259,218

APPENDIX O

SALES/EMPLOYEE RATIOS

Sector	SIC Code	Sales (1,000's)	Employees	Sales/Employees
Books & Supplies	594	611,110	10,356	59,010
Food & Household	540	5,437,994	53,919	100,855
Eating Out	581	2,238,710	102,235	21,898
Entertainment	780 & 790	396,254	11,134	35,590
Automobile	554 & 555	6,933,620	40,977	169,208
Clothing	560	1,238,258	22,787	54,341
Personal Services	720	494,835	23,092	21,429
Health Services	591	799,323	11,835	67,539
Furniture & Appliances	570	1,005,318	12,695	79,190
Other	590	2,064,323	31,663	65,197
Rent				96,427*
Utilities				26,542*

Sales/Employee Ratios are calculated from data presented in:

Census of Retail Trade: Georgia Geographic Area Series, U.S. Department of Commerce 1982, Table 1.

Census of Service Industries: Georgia Geographic Area Series, U.S. Department of Commerce 1982, Table 1a.

*J. Wilson, "Economic Impact of a University on the Local Economy," unpublished dissertation, Kent State University, pp. 148 & 153.

APPENDIX P

CALCULATION OF EMPLOYEE EQUIVALENT OF STUDENT SPENDING

Student Spending Category	Annual Amount of Local Purchases	Local Sales/Employee	Employee Equivalent
Books	301,273	59,010	5.1
Housing	1,133,489	96,427[+]	11.8
Automobile	3,454,507	169,208	20.4
Food & Household	991,634	100,855	9.8
Eating Out	813,302	21,898	37.1
Entertainment	645,778	35,590	18.1
Clothing	726,838	54,341	13.4
Personal Services	352,611	21,429	16.5
Health Services	355,313	67,539	5.3
Furniture & Appliances	71,603	79,190	0.9
Utilities	509,327	26,542[+]	19.2
Other	439,075	65,197	6.7
TOTAL	9,794,750		164.3

1,351 students (study represents 38.7% of student population)

[+] J. Wilson, "Economic Impact of a University on the Local Economy, "unpublished dissertation, Kent State University, pp. 148 and 153.

APPENDIX Q

TOTAL EMPLOYEE IMPACT OF GAINESVILLE JUNIOR COLLEGE

*Full-Time Employees of College	135
Full-Time Jobs Attributed to Student Spending (Table 16)	164
Total Initial Employment	299

Total Initial Employment X Local Multiplier = Total Employment Impact

299 X 1.652 = 494

*Only full-time employees living in impact area were considered.

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FOR JUNIOR COLLEGES
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